A Hermaphroditic Specimen of Chub Mackerel

Scmber japonicus in the Dardanelles, Turkey

Ugur Özakinci, Adnan Ayaz, Ugur Altinaga, Özgur Cengiz and Alikan Öztelen
Department of Fishing and Processing Technologies, Faculty of Fisheries, 
Çanakkale Onsekiz Mart University, Çanakkale, Turkey

Abstract: A hermaphroditic individual of the Chub mackerel, Scmber japonicus, caught in the Dardanelles is described in this study. This specimen is the first record of hermaphroditic Chub mackerel for the Mediterranean Sea.

Key words: Scombridae, Scmber japonicus, hermaphroditism, chub mackerel, dardanelles, Mediterranean sea

INTRODUCTION

Fish migrate in large schools during certain periods of the year through the Dardanelles (Kocatas and Bilecik, 1992). One of the main migrating fish species through this strait is Chub mackerel, Scmber japonicus Houpttyn. It is widespread over the coastal waters of the tropical and subtropical regions of the Pacific, Indian, Atlantic Ocean, the Mediterranean and Black seas. It can undertake long migrations and is vertically distributed from the sea surface up to 300 m (Collette and Nauen, 1983).

MATERIALS AND METHODS

During a study of the hook selectivity, 23 individuals of Chub mackerel were caught in March 2009 in the Dardanelles. Fish were identified based on Collette and Nauen (1983) and scientific names of species were checked with the fish base (Froese and Pauly, 2009). Fish were measured to the nearest cm (total length) and weighed to the nearest g.

RESULTS AND DISCUSSION

Internal examination of fish samples revealed that one individual was hermaphroditic, bearing an ovary and a testis. The tissues of ovary and testis were easily discernible as indicated by clearly divided regions in the same lobe of the hermaphroditic gonad (Fig. 1). The total length and body weight of the hermaphroditic individual were 24.5 cm and 145.09 g, respectively. The length and body weight of the rest of the fish samples ranged between 22.4-27.5 cm and 107.44-206.09 g, respectively. The weight of the hermaphroditic gonad was 1.35 g.

Fig. 1: A hermaphroditic Chub mackerel and their gonads (Ov, ovary and T, testis)

Normal hermaphroditism occurs in species in which the individual is born as a male and changes sex to a female (Protandry) or born as a female and then changes sex to a male (Protogyny) (Atz, 1964). All other forms of sex changes are termed abnormal hermaphrodites or intersexes (Atz, 1964; Devlin and Nagahama, 2002). Abnormal hermaphroditism has been reported for several fish species and both environmental factors and endogenous processes have been suggested to potentially affect sex-determination in fishes (Devlin and Nagahama, 2002).

Abnormal hermaphroditism in scrombidae fishes were reported earlier for Scmber scombrus Lin. (Stewart, 1891), Rastrelliger kanagurta Cuvier (Prabhu and Raja, 1959), Katsuwonus pelamis Lin. (Raju, 1960, Uchida, 1961), Thunnus orientalis Temminck and Schlegel (Sawada et al., 2002) and Thunnus thynnus Lin. (Capotilli et al., 2007). Information on the abnormal
CONCLUSION

This specimen is the first record of abnormal hermaphroditic Chub mackerel for the Mediterranean and Black sea.

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REFERENCES


